IN THE CLAIMS:

1. (currently amended) A method for operating a gas turbine engine including a combustor that includes a premixer assembly and a plurality of damper tubes, said method comprising:

determining the combustor resonant frequency;

coupling an anti-resonant frequency system to a combustor including a premixer assembly and a plurality of damper tubes, wherein the anti-resonant frequency system includes a substantially hollow bleed manifold; and

adjusting the anti-resonant frequency system until the anti-resonant frequency of the damper tubes is approximately equal to the combustor resonant frequency.

2. (currently amended) A method in accordance with Claim 1 wherein coupling an anti-resonant frequency system to the combustor comprises coupling an anti-resonant frequency system further including ~~a substantially hollow bleed manifold,~~ a plurality of substantially hollow extension tubes[[,]] and a bleed valve, to the plurality of damper tubes.

3. (original) A method in accordance with Claim 2 wherein adjusting the anti-resonant frequency system comprises:

inputting a first quantity of combustor air through the damper tubes and into the manifold; and

adjusting the bleed valve to release a second quantity of air from the manifold until the anti-resonant frequency of the damper tubes is approximately equal to the combustor resonant frequency.

4. (original) A method in accordance with Claim 1 wherein coupling an anti-resonant frequency system to the combustor comprises electrically coupling the anti-resonant frequency system including a power source, a cable electrically coupled to the power source, and a plurality of heating elements electrically coupled to the cable to the combustor.

5. (original) A method in accordance with Claim 4 wherein adjusting the anti-resonant frequency system comprises:

coupling at least one heating element to each damper tube; and

adjusting the power source until the anti-resonant frequency of the damper tubes is approximately equal to the combustor resonant frequency.

6. (original) A method in accordance with Claim 5 wherein coupling at least one heating element to each damper tube comprises wrapping at least one heating element around an external surface of each damper tube.

7. (original) A method in accordance with Claim 5 wherein coupling at least one heating element to each damper tube comprises inserting at least one heating element at least partially into each damper tube.

8. (original) A method in accordance with Claim 1 wherein coupling an anti-resonant frequency system to a combustor comprises coupling an anti-resonant frequency system including a plurality of damper tubes to the combustor, the damper tubes fabricated in accordance with:

$f = c / 4 * L$;

where:

$c = \sqrt{\gamma RT}$ is an acoustic velocity of the air;

f is an effective frequency of damper tube;

L is an effective length of damper tube;

γ is a ratio of specific heats of the air;

R is the gas constant of air; and

T is an air temperature.

9. (currently amended) A combustor system for a gas turbine engine, said combustor system comprising:

a premixer assembly;

a plurality of damper tubes; and

an anti-resonant frequency system coupled to said plurality of damper tubes, said anti-resonant frequency system configured to adjust the anti-resonant frequency of said damper tubes until the anti-resonant frequency of said damper tubes is approximately equal to a resonant frequency of the combustor, said anti-resonant frequency system comprising a substantially hollow bleed manifold configured to receive a first quantity of air from said combustor.

10. (currently amended) A combustor system in accordance with Claim 9 wherein said anti-resonant frequency system further comprises:

~~a substantially hollow bleed manifold configured to receive a first quantity of air from said combustor;~~

a plurality of substantially hollow extension tubes coupled to said bleed manifold; and

a bleed valve coupled to said bleed manifold, said bleed valve configured to release a second quantity of air from said manifold to facilitate changing an anti-resonant frequency of said damper tubes to be approximately equal to a resonant frequency of the combustor.

11. (original) A combustor system in accordance with Claim 9 wherein said anti-resonant frequency system comprises:

a power source;

a cable electrically coupled to said power source; and

a plurality of heating elements electrically coupled to said cable, said power source configured to adjust an electrical current to said heating elements until the anti-resonant frequency of said damper tubes is approximately equal to a resonant frequency of the combustor.

12. (original) A combustor system in accordance with Claim 11 further comprising at least one heating element extending around an external surface of each said damper tube.

13. (original) A combustor system in accordance with Claim 11 further comprising at least one heating element inserted at least partially into each said damper tube.

14. (original) A combustor system in accordance with Claim 9 wherein said plurality of dampers are fabricated in accordance with:

$$f = c / 4 * L;$$

where:

$c = \sqrt{\gamma RT}$ is the acoustic velocity of the air;

f is an effective frequency of damper tube;

L is an effective length of damper tube;

γ is a ratio of specific heats of the air;

R is a gas constant of air; and

T is an air temperature.

15. (currently amended) A gas turbine engine comprising:

a compressor;

a turbine coupled in flow communication with said compressor; and

a combustor system coupled between said compressor and said turbine, said combustor system comprising:

a premixer assembly;

a plurality of damper tubes; and

an anti-resonant frequency system coupled to said plurality of damper tubes, said anti-resonant frequency system configured to adjust the anti-resonant frequency of said damper tubes until the anti-resonant frequency of said damper tubes is approximately equal to a resonant frequency of the combustor, said anti-resonant frequency system comprising a substantially hollow bleed manifold configured to receive a first quantity of air from said combustor.

16. (currently amended) A gas turbine engine in accordance with Claim 15 wherein said anti-resonant frequency system further comprises:

~~a substantially hollow bleed manifold configured to receive a first quantity of air from said combustor;~~

a plurality of substantially hollow extension tubes coupled to said bleed manifold; and

a bleed valve coupled to said bleed manifold, said bleed valve configured to release a second quantity of air from said manifold to facilitate changing an anti-resonant frequency of said damper tubes to be approximately equal to a resonant frequency of the combustor.

17. (original) A gas turbine engine in accordance with Claim 15 wherein said anti-resonant frequency system comprises:

a power source;

a cable electrically coupled to said power source; and

a plurality of heating elements electrically coupled to said cable, said power source configured to change an electrical current to said heating elements until the anti-resonant frequency of said damper tubes is approximately equal to a resonant frequency of the combustor.

18. (original) A gas turbine engine in accordance with Claim 17 further comprising at least one heating element extending around an external surface of each said damper tube.

19. (original) A gas turbine engine in accordance with Claim 17 further comprising at least one heating element inserted at least partially into each said damper tube.

20. (original) A gas turbine engine in accordance with Claim 15 wherein said plurality of dampers are fabricated in accordance with:

$$f = c / 4 * L;$$

where:

$c = \sqrt{\gamma RT}$ is the acoustic velocity of the air;

f is an effective frequency of damper tube;

L is an effective length of damper tube;

γ is a ratio of specific heats of the air;

R is a gas constant of air; and

T is an air temperature.